IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:

Jun-ho SUNG et al.

Application No.	10/769,777	Group Art Unit:	2624
Filed:	February 3, 2004	Examiner	Katrina R. Fujita
Customer No.:	38209	Confirmation No.	9278

For: METHOD AND AN APPARATUS TO DIVIDE IMAGE BLOCKS

PRE-APPEAL BRIEF REQUEST FOR REVIEW

Mail Stop AF
Commissioner for Patents
Alexandria, VA 22313

Sir:

      A Notice of Appeal is filed concurrently herewith in connection with the above-identified patent Application. Applicants' attorney respectfully requests a Pre-Appeal Brief Request for Review for at least the reasons discussed below. Although independent claims 1, 16 and 51 in Applicants' Response to After Final Office Action filed on August 31, 2009 were amended, these amendments were made in connection with traversing the 35 U.S.C. 101 rejections, and the Examiner states on page 2 of the Advisory Action that "[f]or the purposes of appeal, the proposed amendment(s) will be entered." Thus, as the amendments of claims 1, 16 and 51 have been entered, the claims are in appealable condition.

      Applicants respectfully submit that in the Final Office Action mailed July 2, 2009, the Examiner has failed to make a prima facie case under 35 U.S.C. §103(a) for the pending claims of the above-identified patent application, for at least the reasons discussed below.

      Independent claims 1, 25, and 51 were rejected in the Final Office Action under 35 U.S.C. §103(a) as being unpatentable over the combination of Mancini et al. ("Robust Quadtree-based disparity estimation...", SPIE article) (hereinafter, "Mancini"), U.S.

Patent No. 6,529,634 to Thyagarajan et al. (hereinafter, "Thyagarajan") and U.S. Patent No. 5,923,376 to Pullen et al. (hereinafter, "Pullen"). Applicants submit that Mancini, Thyagarajan, and Pullen, whether taken alone or in combination with one another, do not teach or suggest, among other things: "setting a plurality of splitting threshold values with a macro block splitting determining unit of the image block splitting apparatus to compare with a characteristic of a macro block in an image frame and determining thereby whether to split the macro block into sub blocks with the macro block splitting determining unit by determining whether the macro block at a same location in a preceding image frame has been split" as recited in claim 1; "setting a plurality of splitting threshold values to compare with a characteristic of a macro block in an image frame and determining thereby whether to split the macro block into sub blocks by determining whether the macro block at a same location in a preceding image frame has been split" as recited in claim 25; and "splitting macro image blocks each of left-eye views and right eye views into sub image blocks according to quadtree disparity estimation using a plurality of splitting threshold values and determining not to split the macro block if the macro block at a same location in a preceding image frame has not been split with a macro block splitting determining unit of the image block splitting apparatus" as recited in claim 51.

With regard to independent claims 1, 25, and 51, the Examiner has failed to make a prima facie case for at least the reasons discussed on pages 16-18, 21-22, and 27-28 in Applicants' Amendment After Final Rejection filed on August 31, 2009. Pullen describes searching for a "block in previous frame buffer 30" that corresponds to a "block in current frame buffer 16," by "segmenting the data" in the frame buffer 16, not "determining" whether to "split the macro block into sub blocks" by "determining" whether the "macro block" at a "same location" in a "preceding image frame" has been "split." Applicants submit that Pullen describes "segmenting" the domain blocks into child blocks and "determining" whether a "search is to be performed" by "comparing" an estimated cost for a block to the "distortion measurement" for the "level 0 block attributable to the level 1 block" – not "determining" whether to "split the macro block into sub blocks" with the "macro block splitting determining unit" by "determining whether the macro block at a same location in a preceding image frame has been split."

Independent claims 16 and 26 were rejected in the Final Office Action under 35

U.S.C. §103(a) as being unpatentable over <u>Mancini</u>, <u>Thyagarajan</u> and <u>Pullen</u>. Applicants submit that <u>Mancini</u>, <u>Thyagarajan</u>, and <u>Pullen</u>, whether taken alone or in combination with one another, do not teach or suggest, among other things; "setting a plurality of macro block splitting threshold values for splitting a macro block in an image frame into sub blocks and determining whether to split the macro block by determining whether a macro block at a same location in a preceding image frame has been split with a macro block splitting determining unit of the image block splitting apparatus" and "setting a plurality of sub block splitting threshold values for splitting the sub block into smaller sub blocks and determining whether to split the sub block into smaller sub blocks by determining whether a sub block at a same location in the preceding image frame has been split with a sub block splitting determining unit of the image block splitting apparatus" as recited in claim 16; and "setting a plurality of macro block splitting threshold values for splitting a macro block in an image frame into sub blocks and determining whether to split the macro block by determining whether the macro block at a same location in a preceding image frame has been split" and "setting a plurality of sub block splitting threshold values for splitting the sub block into smaller sub blocks and determining whether to split the sub block into smaller sub blocks by determining whether the sub block at a same location in the preceding image frame has been split," as recited in claim 26.

With regard to independent claims 16 and 26, Applicants submit that the Examiner has failed to make a prima facie case for at least the reasons discussed on pages 19-23 in Applicants' Amendment After Final Rejection filed on August 31, 2009. <u>Pullen</u> describes performing a "search" to "find a block in the previous frame buffer 30" that "corresponds" with a block in the "current frame buffer 16" by "segmenting the data" in the frame buffer 16 into "domain blocks having a first size" – not "determining" whether to "split the macro block into sub blocks" with the "macro block splitting determining unit" by "determining whether the macro block at a same location in a preceding image frame has been split" or "determining" whether to "split the sub block into smaller sub blocks" by "determining whether a sub block at a same location in the preceding image frame has been split" with a "sub block splitting determining unit of the image block splitting apparatus." <u>Pullen</u> describes "segmenting the level 0 domain block into a plurality of level 1 child domain blocks," and "determining whether a level 1 search is to be

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performed" by "comparing an estimated level 1 cost for a level 1 block" to the "distortion measurement" for the "level 0 block attributable to the level 1 block" -- not "determining" whether to "split the macro block into sub blocks" with the "macro block splitting determining unit" by "determining whether the macro block at a same location in a preceding image frame has been split" or "determining" whether to "split the sub block into smaller sub blocks" by "determining whether a sub block at a same location in the preceding image frame has been split" with a "sub block splitting determining unit of the image block splitting apparatus."

Independent claim 27 was rejected in the Final Office Action under 35 U.S.C. §103(a) as being unpatentable over Mancini, Thyagarajan and Pullen. Applicants submit that Mancini, Thyagarajan, and Pullen, whether taken alone or in combination with one another, do not teach or suggest, among other things "a macro block splitting determining unit that sets a plurality of macro block splitting threshold values for splitting a macro block in an image frame into sub blocks and determines therewith whether to split the macro block by determining whether the macro block at a same location in a preceding image frame has been split," and the Examiner has failed to make a prima facie case for at least the reasons discussed on pages 23-25 in Applicants' Amendment After Final Rejection filed on August 31, 2009. Pullen describes searching for a "block in previous frame buffer 30" that corresponds to a "block in current frame buffer 16," by "segmenting the data" in the frame buffer 16, not "determin[ing]" whether to "split the macro block into sub blocks" by "determining" whether the "macro block" at a "same location" in a "preceding image frame" has been "split." Pullen describes "segmenting" the domain blocks into child blocks and "determining" whether a "search is to be performed" by "comparing" an estimated cost for a block to the "distortion measurement" for the "level 0 block attributable to the level 1 block" – not "determin[ing]" whether to "split the macro block into sub blocks" with the "macro block splitting determining unit" by "determining whether the macro block at a same location in a preceding image frame has been split."

Independent claim 42 was rejected in the Final Office Action under 35 U.S.C. §103(a) as being unpatentable over Mancini, Thyagarajan and Pullen. Applicants submit that Mancini, Thyagarajan, and Pullen, whether taken alone or in combination with one another, do not teach or suggest, among other things, "a macro block splitting

determining unit that sets a plurality of macro block splitting threshold values for splitting a macro block in an image frame into sub blocks and determines whether to split the macro block by determining whether the macro block at a same location in a preceding image frame has been split" and "a sub block splitting determining unit that sets a plurality of sub block splitting threshold values for splitting each sub block into smaller sub blocks and determines whether to split each sub block by determining whether the sub block at a same location in the preceding image frame has been split," and the Examiner has failed to make a prima facie case for at least the reasons discussed on pages 26-27 in Applicants' Amendment After Final Rejection filed on August 31, 2009. Pullen describes "compar[ing]" a "distortion measurement" to a "second error threshold" before processing a "domain child block" – not a "sub block splitting determining unit" that "determines whether to split each sub block" by "determining whether the sub block at a same location in the preceding image frame has been split."
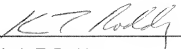
With regard to dependent claims 3, 4, 6-10, 13, 17-19, 22, 28-30, 32, 34-36, 39, 43-45, 48, 52-55, and 57, it is submitted that a prima facie case under 35 U.S.C. §103(a) has not been made for these claims as discussed on pages 18, 21, 22, 25, 27, and 28-30 of Applicants' Amendment After Final Rejection filed on August 31, 2009.

Consideration of the above in connection with the Pre-Appeal Brief Request for Review is earnestly solicited.

If the Examiner believes, for any reason, that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at the number provided below.

Respectfully submitted,

STANZIONE & KIM, LLP

Date: ____October 15, 2009____   By: _____

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